SEMESTER END EXAMINATION, MAY, 2024

Course Name: - B.Tech Semester:- 2nd

Paper Name: - Energy Science & Engineering Paper Code:- TMC-202

Time - 3 Hrs + 20 minutes per hour extra time for V.I. & examinees with writer. Max Marks-70

समय–3 घण्टे+ 20 मिनट प्रति घंटे अतिरिक्त–दृष्टिबाधित एवं सहलेखक परीक्षार्थियों के लिए। अधिकतम अंक–70

Instructions:

- The question paper consists of three sections namely A, B, C. All sections are compulsory.
- Section A- Each question carries **3 mark. All questions are compulsory.**
- Section B- Answer any **5 out of 7** given questions in maximum one hundred fifty (150) words. Each question carries **7 marks.**
- SectionC- Answer any **2 out of 3** given questions in maximum three hundred (300) words. Each question carries **10 marks.**

निर्देश:

- प्रश्न पत्र मे तीन खण्ड अ, ब, व स है।सभी खण्डअनिवार्यहै।
- खण्ड–अ मे प्रत्येक प्रश्न तीन अंक का है। सभी प्रश्न अनिवार्य है।
- खण्ड–ब मे सात प्रश्नों में से किन्ही पाँच प्रश्नो के उत्तर अधिकतम 150 शब्दो मे दे। प्रत्येक प्रश्न सात अंक का है।
- खण्ड–स मे तीन प्रश्नोंमें से किन्हीं दो प्रश्नो के उत्तर अधिकतम (300) शब्दो मे दे। प्रत्येक प्रश्न 10 अंक का है।

Section - A (खण्ड–अ)

Objective Questions(वस्तुनिष्ठप्रश्न)

1. Answer allthe following questions. 5x3 =15

निम्नलिखित सभी प्रश्न अनिवार्य हैं।

i) _____ is made by combining alcohol with vegetable oil, animal fat or recycled cooking grease.

(a) Biodiesel (b) Biomass

(c) Bioelectricity (d) Syngas

ii) Angle made by plane surface with horizontal is called _____

(a) Altitude angle (b) Slope

(c) Zenith angle (d) Hour Angle

iii) Which is the type of energy where the energy is harnessed by the heat accumulated on the surface of water?

(a) Wind energy (b) Wave energy Industrial waste

(c) Ocean thermal energy conversion (d) Solar energy

iv) Which parts function is to reduce the energy of fast neutrons to thermal neutrons in nuclear power plant?

(a) Shielding (b) Coolant

(c) Control rods (d) Moderator

v) GRIHA means that

(a) Green Rating for Indian Habitat Assessment

(b) Green Rating for Integrated Habitat Assessment

(c) Green Rating for International Habitat Assessment

(d) Green Rating for Information Habitat Assessment

Section – B (खण्ड–ब)
Short Answer Questions (लघुउत्तरीय प्रश्न)

2. Answer any five of the following questions in maximum150 words. **5x7=35**
निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर अधिकतम 150 शब्दों में दें।

i. Classify the different forms of renewable and non-renewable forms of energy.

ii. Give in detail about the Present energy scenario of India.

iii. Explain the different types of OTEC plant.

iv. Explain the structural difference and application between the Pelton, Francis and Kaplan turbine.

v. What is the local solar time and declination corresponding to 10:00 am IST on Feb 8 for location India at 87.5° east longitude, with the given Equation of Time correction=(-14.37) min and Standard time longitude for IST is 82.5°E.

vi. Discuss in brief about Energy storage system.

vii. What do you understand by Net Zero Concept building, Near Zero Energy Building and Energy Plus Building?

Section – C (खण्ड–स)
Descriptive Questions(विवरणात्मकप्रश्न)

3. Answer any two of the following question in maximum 300 words. **2x10=20**
निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर अधिकतम 300 शब्दों में दें।

i) What do you understand by Carbon credit? Explain its importance in environment also discuss its advantages and disadvantages.

ii) Explain the working of the Pressurized water nuclear reactor and Pressurized heavy water nuclear reactor.

iii) Discuss the advantages and disadvantages of opencast and underground mining.

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